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Q71

Which of the following statements can help in water conservation in agriculture? 1. Reduced or zero tillage of the land 2. Applying gypsum before irrigating the field 3. Allowing crop residue to remain in the field Select the correct answer using the code given below: (a) 1 and 2 only (b) 3 only (c) 1 and 3 only (d) 1, 2 and 3
Official key: C.

UPSC Civil Services Prelims 2017 · General Studies · 2 marks · Environment and Ecology
Environment, ecology, climate, biodiversity - Prelims GS Paper I.

Explanation**(a)**

Option (a) is 1 and 2 only. Reduced or zero tillage does conserve soil moisture, but applying **gypsum** is a sodic-soil amendment (calcium) rather than a water-conservation practice as such. Statement 2 is not a water-saving method in the sense of the question. This option is not the key.

(b)

Option (b) is 3 only. Residue **mulch** does help, but zero tillage also conserves water, so omitting statement 1 is incomplete. This option is therefore wrong.

(c) Official key

Reduced/zero tillage cuts evaporation and runoff; leaving crop residue as **mulch** shades soil and improves infiltration. **Gypsum** before irrigation is not listed as a water-conservation technique. Hence 1 and 3 only is the official key.

(d)

Option (d) is 1, 2 and 3. Including **gypsum** as a water-conservation measure is the error. This option is not the key.

Summary

Official key is (c) 1 and 3 only. **Conservation agriculture** saves water by less tillage and by residue cover. **Gypsum** is used to reclaim alkali/sodic soils and improve structure; it is not itself a method of saving irrigation water in the question's sense. Statements 1 and 3 help; 2 does not. Only that pair is correct.

Related possible facts

These can be asked in a future Prelims paper.

Conservation agriculture

Minimum tillage, residue retention, rotation

Mulch

Residue layer reducing evaporation and splash erosion

Gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$)

Amendment for sodic soils; supplies calcium

Laser land levelling

Another water-saving field practice (not in the stem)

System of Rice Intensification

Alternate wetting; related water-saving idea in paddy

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